<u>IN THE CLAIMS</u>

Please amend the claims as follows:

1.   (Previously Presented)   A method of encoding a multi-channel audio signal comprising at least two audio channels, the method comprising the steps of:

generating a single channel audio signal from the at least two audio channels, and encoding, using an encoder, the single channel audio signal into a bit stream as an encoded single channel audio signal;

generating information from the at least two audio channels allowing to recover with a required quality level the multi-channel audio signal from the single channel audio signal and the information; and

combining the information and the single channel audio signal,

wherein the generating information step comprises the steps of:

determining a first portion of the information for a first frequency region of the multi-channel audio signal using a parameter determining circuit;

encoding, using a parameter coder, the first portion of the information into the bit stream as an encoded first portion of the information;

determining a second portion of the information for a second frequency region of the multi-channel audio signal using the

parameter determining circuit, the second frequency region being a portion of the first frequency region; and

encoding, using the parameter coder, the second portion of the information into the bit stream as an encoded second portion of the information,
wherein the second portion is differentially coded with respect to the first portion.

2. (Previously Presented) The method of encoding a multi-channel audio signal as claimed in claim 1, wherein the method further comprises the steps of:

receiving a maximum allowable bit rate of the encoded multi-channel audio signal; and

determining and encoding the second portion of the information for the second frequency region of the multi-channel audio signal if a bit rate of the encoded multi-channel audio signal comprising the single channel audio signal and the first and second portions of the information is not higher than the maximum allowable bit rate.

3. (Previously Presented) The method of encoding as claimed in claim 1, wherein the single channel audio signal is a particular combination of the at least two audio channels.

4. (Previously Presented) The method of encoding as claimed in claim 1, characterized in that the information comprises sets of parameters, the first portion comprises at least a first one of the sets of parameters, the second portion comprises at least a second one of the sets of parameters, wherein each set of parameters is associated with a corresponding frequency region.

5. (Previously Presented) The method of encoding as claimed in claim 4, characterized in that the sets of parameters comprise at least one localization cue.

6. (Previously Presented) The method of encoding as claimed in claim 5, characterized in that the at least one localization cue is selected from: an interaural level difference, an interaural time or phase difference, or an interaural cross-correlation.

7. (Previously Presented) The method of encoding as claimed in claim 1, characterized in that the first frequency region covers a full bandwidth of the multi-channel audio signal.

8. (Previously Presented) A method of encoding a multi-channel audio signal comprising at least two audio channels, the method comprising the steps of:

    generating a single channel audio signal from the at least two audio channels, and encoding, using an encoder, the single

channel audio signal into a bit stream as an encoded single channel audio signal;

generating information from the at least two audio channels allowing to recover with a required quality level the multi-channel audio signal from the single channel audio signal and the information; and

combining the information and the encoded single channel audio signal,
wherein the generating information step comprises the steps of:

determining a first portion of the information for a first frequency region of the multi-channel audio signal using a parameter determining circuit;

encoding, using a parameter coder, the first portion of the information into the bit stream as an encoded first portion of the information;

determining a second portion of the information for a second frequency region of the multi-channel audio signal using the parameter determining circuit, the second frequency region being a portion of the first frequency region; and

encoding, using the parameter coder, the second portion of the information into the bit stream as an encoded second portion of the information,
characterized in that the first frequency region substantially covers a full bandwidth of the multi-channel audio signal, the second frequency region covers a portion of the full bandwidth, and in that the determining of the second portion of the information is

adapted to determine sets of parameters for both the second
frequency region and a set of further frequency regions, the second
frequency region and the set of further frequency regions
substantially covering the full bandwidth, wherein the set of
further frequency regions comprises at least one further frequency
region.

9. (Previously Presented) The method of encoding as claimed in
claim 8, characterized in that the single channel audio signal and
the first portion of the information form a base layer of
information which is always present in the encoded multi-channel
audio signal, and in that the method comprises receiving a maximum
allowable bit rate of the encoded multi-channel audio signal, the
second portion of the information forming an enhancement layer of
information which is encoded only if the bit rate of the encoded
base layer and enhancement layer is not higher than the maximum
allowable bit rate.

10. (Previously Presented) The method of encoding as claimed in
claim 4, characterized in that the determining of the first portion
of information in a particular frame of encoded information
comprises determining the first one of the sets of parameters in
the particular frame, and coding the first one of the sets of
parameters based on the first one of the sets of parameters of a
frame preceding the particular frame.

11.   (Previously Presented) The method of encoding as claimed in claim 8, characterized in that the determining of the second portion of information in a particular frame of the encoded information comprises determining the sets of parameters of the second portion in the particular frame and coding the sets of parameters of the second portion in the particular frame based on the sets of parameters of a frame preceding the particular frame.

12.   (Previously Presented) The method of encoding as claimed in claim 8, characterized in that the determining of the second portion of information in a particular frame of the encoded information comprises determining the sets of parameters of the second portion in the particular frame and coding the sets of parameters of the second portion in the particular frame based on the first one of the sets of parameters of a frame preceding the particular frame.

13.   (Previously Presented) The method of encoding as claimed in claim 10, characterized in that the determining comprises calculating a difference between the corresponding parameters in the particular frame and the frame preceding the particular frame.

14.   (Previously Presented) An encoder for coding a multi-channel audio signal comprising at least two audio channels, the encoder comprising:

means for generating a single channel audio signal from the at least two audio channels, and for encoding the single channel audio signal into a bit stream as an encoded single channel audio signal; and

means for generating information from the at least two audio channels allowing to recover, with a required quality level, the multi-channel audio signal from the single channel audio signal and the information, and for combining the information into the bit stream of the encoded single channel audio signal,
wherein the means for generating information comprises:

means for determining a first portion of the information for a first frequency region of the multi-channel audio signal, and for encoding the first portion of the information into the bit stream as an encoded first portion of the information; and

means for determining a second portion of the information for a second frequency region of the multi-channel audio signal, the second frequency region being a portion of the first frequency region, and for encoding the second portion of the information into the bit stream as an encoded second portion of the information,

wherein the second portion is differentially coded with respect to the first portion.

15. (Previously Presented) The encoder for encoding a multi-channel audio signal as claimed in claim 14, wherein the encoder further comprises:

means for receiving a maximum allowable bit rate of the encoded multi-channel audio signal,

and wherein said means for determining the second portion of the information only determines and encodes said second portion if a bit rate of the encoded multi-channel audio signal comprising the single channel audio signal and the first and second portions of the information is not higher than the maximum allowable bit rate.

16.   (Previously Presented) An apparatus for supplying an audio signal, the apparatus comprising:

an input for receiving an audio signal;

an encoder as claimed in claim 14 for encoding the audio signal to obtain an encoded audio signal; and

an output for supplying the encoded audio signal.

17.   (Currently Amended)   A non-transitory computer-readable medium having stored thereon an encoded audio signal comprising:

an encoded single channel audio signal formed from at least two audio channels of a multi-channel audio signal; and

information from the at least two audio channels allowing to recover, with a required quality level, the multi-channel audio signal from the single channel audio signal and the information, wherein the information comprises:

a first portion of the information for a first frequency region of the multi-channel audio signal; and

a second portion of the information for a second frequency region of the multi-channel audio signal, the second frequency region being a portion of the first frequency region,

wherein the second portion is differentially coded with respect to the first portion.

18. (Cancelled).

19. (Currently Amended)   A method of recovering a multi-channel audio signal from an encoded single channel audio signal, said single channel audio signal having been encoded as claimed in claim 1, the method of decoding comprising:

obtaining a decoded single channel audio signal and coded information related to a corresponding multi-channel audio signal from an encoded single channel audio signal;

obtaining decoded information from the coded information allowing to recover the multi-channel audio signal from the decoded single channel audio signal and the decoded information, the decoded information comprising a first portion of the information and a second portion of the information, the second portion having been differentially coded with respect to the first portion of the information; and

applying either the first portion of the information or the first portion and the second portion of the information on the

single channel audio signal to generate the recovered multi-channel audio signal.

20. (Currently Amended) A decoder for decoding an encoded single channel audio signal, said encoded single channel audio signal having been encoded ~~as claimed in claim 1~~ by generating a single channel audio signal from at least two audio channels, and encoding, using an encoder, the single channel audio signal into a bit stream as an encoded single channel audio signal; generating information from the at least two audio channels allowing to recover with a required quality level the multi-channel audio signal from the single channel audio signal and the information; and combining the information and the single channel audio signal, wherein the generating information comprises determining a first portion of the information for a first frequency region of the multi-channel audio signal using a parameter determining circuit; encoding, using a parameter coder, the first portion of the information into the bit stream as an encoded first portion of the information; determining a second portion of the information for a second frequency region of the multi-channel audio signal using the parameter determining circuit, the second frequency region being a portion of the first frequency region; and encoding, using the parameter coder, the second portion of the information into the bit stream as an encoded second portion of the information, wherein the second portion is differentially coded with respect to the first portion, the decoder comprising:

means for obtaining a decoded single channel audio signal and coded information related to a corresponding multi-channel audio signal from an encoded single channel audio signal;

means for obtaining decoded information from the coded information allowing to recover the multi-channel audio signal from the decoded single channel audio signal and the decoded information, the decoded information comprises a first portion of the information and a second portion of the information, the second portion having been differentially coded with respect to the first portion of the information; and

means for applying the first portion of the information and the second portion of the information on the single channel audio signal to generate the decoded multi-channel audio signal.

21.   (Previously Presented) An apparatus for supplying a decoded audio signal, the apparatus comprising:

an input for receiving an encoded audio signal;

a decoder as claimed in claim 20 for decoding the encoded audio signal to obtain a multi-channel output signal; and

an output for supplying or reproducing the multi-channel output signal.